Lessons with Plants. By L. H. Bailey. Pp. xxxi + 491. (London : Macmillan and Co., Ltd., 1898.)

THOUGH written for the use of teachers and students of botany in North America, this book will be found almost as useful on this side of the Atlantic. Very many of the plants employed as examples are either natives of, or very generally cultivated in, the British Islands, and could easily be obtained both in country and in town. Even where the selected examples are not themselves readily procured among us the methods of study, the lessons drawn from them, and the suggestions offered for further personal investigation, are very often such as could be readily applied by an intelligent reader to British species.

The author very consistently carries out his method of instruction. He assumes that the pupil is absolutely ignorant ; and taking familiar objects, such as an apple-twig, he shows simply and well the information that can be read in them by the trained eye and mind. The book is admirably fitted to give training in the methods of observation, in so far as that can be given during school-life. It should be of peculiar value to teachers if used (as the author, in the introduction, points out that it is meant to be) to suggest how lessons can be drawn from any and every plant. One cannot read many pages without realising that the careful observation and accurate knowledge gained by the teacher that works out examples in the manner followed here will enable him to make the subjects taught by him very real and living. It is the true scientific method applied to the first steps in botany. To the beginner in the science, also, who wishes to learn, but cannot obtain systematic instruction, this book would be an excellent introduction. If each section were read with the actual specimens in hand, and compared with the description step by step, and, still more, if the "suggestions" were followed out practically, the student would have gained a very valuable training, and a trustworthy foundation on which to build up the wider study. The method followed is naturally somewhat informal ; but it allows of many sides and applications of botany being touched on in a way to awaken the interest of pupils ; and the information conveyed is of a kind that does not require to be unlearned, but can be built up into its proper place as the study becomes more systematic. Occasionally one feels that the explanation is insufficient, and that it must leave a vagueness in the mind of a beginner, as, for example, where we are told that it is "the custom of botanists" to "say that when either floral envelope is wanting it is the corolla (unless there is some special reason to the contrary). This is, generally, an arbitrary definition, but it would be just as arbitrary to say that the sepals are missing." It is scarcely "evident" in respect of the ligulate flowers of the dandelion and *Rudbeckia* "that if the corolla of a floret were to develop to such a length, it could not spread equally in all directions, as a mathematical calculation will prove ; it therefore develops in one direction, as a leaf does." The description of the flowering spurge would scarcely be clear to a beginner. But such defects are so inconspicuous as to detract little from the value of the book, which is enhanced by many excellent original "delineations from nature."

Ethnological Studies among the North-West Central Queensland Aborigines. By Walter E. Roth. Pp. xvi + 199, and Plates. (Brisbane : Gregory, 1897.)

THE chief difficulty which an investigator has to surmount in studying the habits and customs of a savage race is their innate suspicion, which often prevents them relating not only the traditions of their tribe, but also their common customs.

Roth claims to have overcome this difficulty by a prolonged residence among the natives of North-West

Central Queensland, and states that it was not until he was fully conversant with their language that he could acquire sufficient confidence from the natives to learn their customs.

As an aid to future explorers, he begins his book with an elementary grammar and vocabulary of the language spoken in the Boulia district : a table is added, comparing the words in common use in adjacent districts.

This race communicates ideas by signs as well as sounds ; the origin of the actual manual movements is usually easy to trace, and lucidity is added to the description by illustrations. Social and individual nomenclature among these races is developed to such an extent, that careful study of an admirable chapter devoted to the question is necessary for the reader to fully comprehend that intricate organisation.

Roth describes the food and the method of obtaining and preparing it ; the recreations and amusements of the people. Cannibalism, he states, is practised in the Boulia district ; but a person is never slain for the purpose of supplying food, nor may any but relatives partake of a corpse.

The last chapter is devoted to descriptions of initiation ceremonies, which are often too gruesome to dwell upon in detail. The book consists of a description of a number of facts ; the origin and development of customs is but rarely attempted.

L'Électro-chimie. Production électrolytique des Composés chimique. By A. Minet. Pp. 167. (Paris : Gauthier-Villars et Fils ; Masson & Cie.)

THIS little work is a volume of the well-known "Encyclopédie Scientifique des Aide-Memoire," and is devoted mainly to the industrial applications of electrolysis other than those of which the object is the preparation of metals. The chapter dealing with the electrolysis of solutions of sodium and potassium chlorides, which gives a good account of the more important processes which have been proposed for the preparation of caustic alkalis, hypochlorites and chlorates, may be specially commended. The attempts which have been made to employ electrolysis in purifying and ageing alcoholic liquids, in tanning, and in purifying sugar, are described, as well as a number of minor applications of the electric current.

"Théories de L'Électrolyse" (pp. 175) is another volume of the same series as the above, and by the same author. It gives a sketch of the theory of the voltaic cell, of the constitution of electrolytes and gases, and of osmotic pressure. Electrolytic conductivity and the migration of the ions are also treated at some length. The researches of the author's fellow countrymen are rather fully, though not always clearly, described, the work done in other countries receiving very inadequate treatment.

LETTER TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

Malformed Crabs.

IN your issue of March 10 I observe a most interesting letter from your correspondent, Mr. R. I. Pocock, regarding a malformed specimen of *Cancer pagurus* in the Dover Museum. I have never seen such a remarkable case of malformation in the common edible crab, but in the Robertson Museum here is to be seen a very fine specimen of *Nephrops norvegicus*, having three digits on the right pincer or great claw. The supernumerary digit,

which is fully two-thirds the size of the normal one, springs from the inner side of the base of the inner movable finger, and is sharply toothed on both sides, and directly opposable to the outer finger. The normal digit is fully developed and curves outwards from the supernumerary one at a wide angle, the distance between them being fully three-quarters of an inch at the points. They move together, and permit an opening of about half an inch between the supernumerary and the normal outer digit, so that little or no inconvenience would be caused to the animal during life. This specimen was caught by fishermen in the neighbourhood of Cumbrae, and was given to a Millport gentleman, Mr. Liddle, who kindly handed it over to the Museum.

ALEXANDER GRAY.

Millport Marine Biological Station, March 6.

SCIENTIFIC EXPERTS AND PATENT CASES.

WE have often had occasion to point out the many disadvantages which are connected with the present system of obtaining and using scientific evidence in courts of law. The disadvantage which chiefly concerns us is that science and men of science are at times thereby drawn into and through mud of a most objectionable quality; but there are many others.

We are glad to see that the matter has again been brought to the front, and this time by the Lord Chancellor himself, and that alterations in the present mode of procedure are being discussed.

We content ourselves this week by reproducing the following leading article in Wednesday's *Times*.—

In the recent sittings of the Law Courts nothing has been more remarkable than the large number of patent actions. Certain inventions have been veritable gold mines to patent lawyers, agents and experts. The bicycle is scarcely more familiar in the streets and highways than in the Courts. We could name patentees who are never out of litigation to protect their menaced rights; certain lamps, gas burners, and explosives are always "going to the Lords." A very substantial part of judicial time is taken up in examining the rival claims of inventors, and they are likely to ask for more. The history of science is constantly illustrating the fact that the same ideas are in many minds at the same time, that often it is an accident whether A or B first propounds his suggestions, and that the priority of one over the other may be a matter of a few months or even days. That is a partial explanation of the multitude of disputes as to bicycle tires, bicycle saddles, metal rims, chains, and gear of all sorts. A further explanation is to be found in the profits derivable from patents as to articles used by hundreds of thousands. Sometimes the Courts are called upon to decide between two independent inventors. Just as often the fight is between one who has an honest claim and another who wishes to levy blackmail or to be bought out. The mode of determining such actions is far from satisfactory. The Lord Chancellor, in a case in the House of Lords which we reported the other day, gave expression to a widespread opinion on this point. The case turned on five or six lines in a specification relating to the tires of bicycles; but it occupied inordinate time both in the Court below and in the Court of Appeal. "Having regard to the extravagant and extraordinary consumption of time which was involved in the determination of this case," said the Lord Chancellor, "witnesses of great eminence being called upon both sides and evidence given which amounts in the book which I hold in my hand to 500 printed quarto pages, it is no wonder that, if a case so simple in its character is so protracted, there is what is called a 'block' in the Courts of law." So serious is the state of things that the Lord Chancellor intimated that it might be necessary to hand over to a special tribunal the trial of cases for which the ordinary procedure seemed inapt. A well-informed correspondent, Mr. W. L. Wise, in a letter which we publish to-day, expresses much the same opinion in even stronger terms. "The present state of things virtually amounts to a denial of justice to all but those having the command of large sums of money." This is an old complaint. Years ago the late Master of the Rolls said, "There is something catching in patent cases, which is that it makes everybody argue and ask questions to an interminable extent. A patent case, with no more difficult question to try than any other case, instead of

lasting six hours, is invariably made to last six days, if not twelve. I am sure there ought to be some remedy for it." In *Ehrlich v. Ihlee* the Court of Appeal took occasion to complain of the "frightful mischief" caused by the prolixity of the proceedings in patent actions. Mr. Wise suggests a remedy. He points out that the Comptroller-General of Patents or his deputy determines questions not unlike the questions of infringement which come before the Courts; and he trusts that, if the staff of the Patent Office were strengthened, a tribunal more economical, expeditious, and not less fit than the present would be found. An appeal lies to the law officers; and it is a recommendation to the suggested system, in the eyes of our correspondent, that at all stages patent agents may appear for the parties.

We have our doubts about the efficacy or success of this recommendation, though certainly not on the ground that patent agents, whom the Legislature has very properly recognised, would have a larger field than is now theirs. We should be glad to see them invested with more privileges, and corresponding responsibilities when they proved ignorant and careless. But such a tribunal would not satisfy patentees, who are the most pugnacious and persevering of litigants. Beaten in one Court, they will resort to another; if they at last acquiesce in the decision of the House of Lords, it is only because there is no tribunal above it. Such are the uncertainties necessarily attending many of the disputes, and, above all, such are the rewards that come with success in patent actions, that every weapon is, and always will be, used in the fight. It is not to be expected that, to take two examples at random, the parties to the litigation before Mr. Justice Wills in 1896 and 1897 in "*The Incandescent Gas Light Company v. the De Mare Incandescent Gas Light System*" and "*The Pneumatic Tyre Company v. the Ixion Pneumatic Tyre Company*" would be content with the decision of a few officials of the Patent Office. In the great majority of the cases referred to by the Lord Chancellor and by our correspondent much money is at stake; and the parties will spare no expense to gain their point.

A more plausible suggestion is that the evidence should not be left, as it now is, solely to the discretion of the parties; that the Judge should nominate some experts—if possible one in whom all have confidence—to report on the invention and the question of novelty, validity, or infringement; and that he should be guided by the report unless it was shown to be erroneous. This would prevent the competition, so common and so ruinous to poor litigants, in the production of expert evidence. It is no small recommendation of this suggestion that under other systems of law it is adopted and is found to answer. There is, however, some force in one criticism—Where, in many cases, is a truly impartial expert to be found? If the question is one of great importance, a scientific witness of eminence has probably in his writings or in some discussion committed himself, directly or indirectly, to an opinion on one or more of the points involved. To take an actual instance, it would have been difficult in the recent litigation between the *Maxim-Nordenfellt Company* and *Sir William Anderson* to have found a chemist whose report on the properties of the explosives under consideration would have been accepted as *prima facie* valid. Good might come of a special tribunal framed on the lines of the Commercial Court. But sometimes what is imperatively needed is the unbiased opinion of an intelligent outsider with no theories about physics. One point of delicacy is rarely touched by the critics of the existing system. It must be present to them all. In some professions a traditional sense of honour prevails to which all must conform, or appear to do so, and which prevents open and flagrant deviations from rectitude. Among doctors, for example, there are black sheep; but they keep well out of sight. It is notorious that, even in cases in which life and death are at stake, or when there happens to be a temptation to speak loosely, it is rare to find a doctor giving evidence in favour of theories which his brethren would scout as manifestly absurd. Could as much be said of the testimony of scientific experts in patent actions? There may be countries in which such witnesses never overstate the case and never sell their opinion. Ours is not one of them. Many scientific witnesses who ought to know better have acquired a very bad habit; they have come to regard themselves as advocates—in the witness-box. It seems a poor palliation of a real evil to press on scientific experts—some do not need that counsel—a loftier notion of their function than befogging the Judge or finding more or less plausible reasons for what they know to be untenable and absurd.